



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,832	02/24/2004	Masatomo Yamada	051626-5011	2097
9629	7590	10/26/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			WALSH, RYAN D	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,832

Applicant(s)

YAMADA, MASATOMO

Examiner

Ryan D. Walsh

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) 3, 5, 9 and 13-30 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4, 6-8, and 10-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10/3/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-944)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/24/2004
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1, 2, 4, 6-8, 10-12, and 15-19 in the reply filed on October 3rd, 2005 is acknowledged. Although applicant indicates claims 15-19 belong to the elected species, these claims are withdrawn because the claimed angular relationship is not disclosed as part of the species of Fig. 17, and the altering of the belt angle appears to conflict with the positional arrangement of the elected species.

Claims 3, 5, 9, and 13-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 3rd, 2005.

Specification

The disclosure is objected to because of the following informalities: Page 31, Ln. 22, "Fig. 2b, should be labeled "Fig. 1b".

Appropriate correction is required.

Claim Objections

Claim 7 is objected to because of the following informalities: The word "which" is misspelled. The phrases "straight line transfer material conveying direction [Pg. 74, Ln. 8]", "transfer material conveying direction of a straight line [Pg. 74, Ln. 14]", and "the most downstream portion of the intermediate transfer member [Pg. 74, Ln. 17]" are all unclear and unascertainable when referring to Fig. 17.

Claims 6, and 10-12 are objected to because of the following informalities: The phrase "straight line in the transfer material conveying direction" is unclear and unascertainable when referring to Fig. 17.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Taguchi et al. (US Pat. #. 6,766,124).

Regarding claim 1, Taguchi et al. teach, "An image forming apparatus comprising: an image carrier (11) which has a predetermined center of rotation and on

which a toner image is formed by developing an electrostatic latent image formed thereon with a toner; a developing device (20) which has a developing roll that rotates while carrying a toner on the surface thereof and that conveys the toner to a developing position at which the electrostatic latent image on the image carrier is developed by the toner; an intermediate transfer member (30) which is disposed in an approximately flat shape and circulatingly moves, onto which the toner image on the image carrier is primarily transferred at a predetermined transfer position (14), and which has a second transfer position (39) at which the toner image is secondarily transferred onto a transfer material (4); and a fixing unit (40) which fixes the toner image on the transfer material, which has undergone the transfer of the toner image, thereon at a predetermined fixing position, wherein both the image carrier (11) and the developing roll (20) are disposed in a triangle region formed by the approximately flat-shaped intermediate transfer member, a vertical line in contact with the intermediate transfer member, and a horizontal line in contact with the intermediate transfer member (Fig. 1)."

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi et al. (US Pat. #. 6,766,124) in view of Shin (US Pat. # 6,895,204).

Regarding claim 4, Taguchi et al. do not teach teach, "a first support roll that supports the intermediate transfer member from the inside thereof at the secondary transfer position; and a second support roll that supports the intermediate transfer member from the inside thereof at a position on the upstream side of the secondary transfer position in a moving direction of the intermediate transfer member and forms a short side of the approximately flat-shaped intermediate transfer member which extends upstream of a transfer material conveying direction in cooperation with the first support roll." However, Shin teaches, "a first support roll (Fig. 2, ref. # 42) that supports the intermediate transfer member from the inside thereof at the secondary transfer position; and a second support roll (26b) that supports the intermediate transfer member from the inside thereof at a position on the upstream side of the secondary transfer position in a moving direction of the intermediate transfer member and forms a short side of the approximately flat-shaped intermediate transfer member which extends upstream of a transfer material conveying direction in cooperation with the first support roll." Regarding the remainder of claim 4, Taguchi et al teaches, "wherein the image carrier (11) is disposed so as to come into contact with a long side portion of the intermediate transfer member along which the intermediate transfer member moves in a direction in which the intermediate transfer member approaches the second support roll (would be near

ref. # 39) at approximately the center of the long side portion over a predetermined region of the intermediate transfer member in the moving direction thereof (Fig. 1)."

It would have been obvious to one skilled in the art at the time the invention was made to modify Taguchi et al. invention to include a first support roll that supports the intermediate transfer member from the inside thereof at the secondary transfer position; and a second support roll that supports the intermediate transfer member from the inside thereof at a position on the upstream side of the secondary transfer position in a moving direction of the intermediate transfer member and forms a short side of the approximately flat-shaped intermediate transfer member which extends upstream of a transfer material conveying direction in cooperation with the first support roll.

The ordinary artisan would have been motivated to modify Taguchi et al. invention in a manner described above for at least the purpose of enabling a tighter transfer belt to reduce the chance of wrinkles on the belt.

Claims 6-8, 10-12, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi et al. (US Pat. #. 6,766,124) in view of Suzuki et al. (US Pat. # 6,853,825).

Regarding claim 6, Taguchi et al. teach, "An image forming apparatus comprising: an image carrier (11) which has a predetermined center of rotation and on which a toner image is formed by developing an electrostatic latent image formed thereon with a toner; a rotary developing device (20) that has a plurality of developing units (2k, 2y, 2m, 2c), which are disposed about a predetermined center of rotation thereof, and in which respective color toners are accommodated, and develops the

electrostatic latent image on the image carrier by a developing unit which is faced to the image carrier by the rotation of the rotary developing device; an intermediate transfer member (30) which is disposed in an approximately flat shape and circulatingly moves, onto which the toner image on the image carrier is primarily transferred at a predetermined transfer position (14), and which has a second transfer position (39) at which the toner image is secondarily transferred onto a transfer material (4); a fixing unit (40) which fixes the toner image on the transfer material, which has undergone the transfer of the toner image, thereon at a predetermined fixing position; and a conveying path (62 → 34 → 35) along which the transfer material passes through the secondary transfer position and the fixing position and which has a partial conveying path extending approximately vertically or approximately horizontally between the secondary transfer position (39) and the fixing position (between 41 & 42), wherein the primary transfer position (Fig. 1, ref. # 14) is disposed on a side where the approximately flat-shaped intermediate transfer member moves in a direction in which the intermediate transfer member approaches the secondary transfer position, wherein the secondary transfer position (39) is disposed upstream of a straight line in a transfer material conveying direction, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that pass through the center of rotation of the image carrier." Taguchi et al. do not teach, "wherein the fixing position is disposed upstream of a straight line in the transfer material conveying direction, which passes through the center of rotation of the rotary developing device and the center of rotation of the image carrier." However, wherein the fixing position is

disposed upstream of a straight line in the transfer material conveying direction, which passes through the center of rotation of the rotary developing device and the center of rotation of the image carrier is routine in the art as shown by Suzuki et al. (Fig. 3, ref. # 45, imaginary line passing through 23 & 20 center of rotation). It would have been obvious to one skilled in the art at the time the invention was made to modify Taguchi et al. invention to include wherein the fixing position is disposed upstream of a straight line in the transfer material conveying direction, which passes through the center of rotation of the rotary developing device and the center of rotation of the image carrier.

The ordinary artisan would have been motivated to modify Taguchi et al. invention in a manner described above for at least the purpose of enabling higher freedom of layout within the machine, also occupying a smaller area.

Regarding claim 7, Taguchi et al. teach, "An image forming apparatus comprising: an image carrier (11) which has a predetermined center of rotation and on which a toner image is formed by developing an electrostatic latent image formed thereon with a toner; a multi-color developing device (20) which has a plurality of developing units (2k, 2y, 2c, 2m) disposed thereon and accommodating respective color toners and develops the electrostatic latent image on the image carrier by a developing unit selected from the plurality of developing units; an intermediate transfer member (30) which is disposed in an approximately flat shape and circulatingly moves, onto which the toner image on the image carrier is primarily transferred at a predetermined transfer position (14), and which has a second transfer position (39) at which the toner image is secondarily transferred onto a transfer material (4); a fixing unit (40) which

fixes the toner image on the transfer material, which has undergone the transfer of the toner image, thereon at a predetermined fixing position; and a conveying path (62 → 34 → 35) along which the transfer material passes through the secondary transfer position (39) and the fixing position (between 41 & 42) and which has a partial conveying path extending approximately vertically or approximately horizontally between the secondary transfer position and the fixing position, wherein the primary transfer position (Fig. 1, ref. # 14) is disposed in an intermediate portion on a side where the flat-shaped intermediate transfer member moves in a direction in which the intermediate transfer member approaches the secondary transfer position." Taguchi et al. do not teach, "wherein the secondary transfer position is disposed upstream of a straight line in a transfer material conveying direction, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that pass through the center of rotation of the image carrier, and wherein the fixing position is disposed upstream in the transfer material conveying direction of a straight line, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that are in contact with the most downstream portion of the intermediate transfer member in the conveying direction thereof." However, Suzuki et al. teach, "wherein the secondary transfer position is disposed upstream of a straight line in a transfer material conveying direction, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that pass through the center of rotation of the image carrier (Fig. 3, positioning of 20 with respect to positioning of 32 & 35 (secondary

transfer position)), and wherein the fixing position is disposed upstream in the transfer material conveying direction of a straight line, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that are in contact with the most downstream portion of the intermediate transfer member in the conveying direction thereof (Fig. 3, ref. # 45, imaginary line passing through 23 & 20 center of rotation)." It would have been obvious to one skilled in the art at the time the invention was made to modify Taguchi et al. invention to include wherein the secondary transfer position is disposed upstream of a straight line in a transfer material conveying direction, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that pass through the center of rotation of the image carrier, and wherein the fixing position is disposed upstream in the transfer material conveying direction of a straight line, which is approximately vertical to a direction in which the partial conveying path extends, of a horizontal line and a vertical line that are in contact with the most downstream portion of the intermediate transfer member in the conveying direction thereof.

The ordinary artisan would have been motivated to modify Taguchi et al. invention in a manner described above for at least the purpose of enabling higher freedom of layout within the machine, also occupying a smaller area.

Regarding claim 8, Taguchi et al. teach, "An image forming apparatus comprising: an image carrier (11) which has a predetermined center of rotation and on which a toner image is formed by developing an electrostatic latent image formed thereon with a toner; a multi-color developing device (20) which has a plurality of

developing units (2k, 2y, 2c, 2m) disposed thereon and accommodating respective color toners and develops the electrostatic latent image on the image carrier by a developing unit selected from the plurality of developing units; an intermediate transfer member (30) which is disposed in an approximately flat shape and circulatingly moves, onto which the toner image on the image carrier is primarily transferred at a predetermined transfer position (14), and which has a second transfer position (39) at which the toner image is secondarily transferred onto a transfer material (4); a fixing unit (40) which has a pair of rotating members (41 & 42), clamps the transfer material, onto which the toner image has been transferred, between the pair of rotating members at a predetermined fixing position, and fixes the toner image on the transfer material; and a conveying path (62 → 34 → 35) along which the transfer material passes through the secondary transfer position and the fixing position and which has a partial conveying path extending approximately vertically or approximately horizontally between the secondary transfer position (39) and the fixing position (between 41 & 42), wherein the image carrier (11) is disposed at a position at which the image carrier is in contact with the approximately flat-shaped intermediate transfer member (30) on the side thereof where the intermediate transfer member moves in a direction in which the intermediate transfer member approaches the secondary transfer position as well as the image carrier is disposed downstream of a first straight line which is approximately vertical to a direction, in which the partial conveying path extends, of a horizontal line and a vertical line that are in contact with a portion of the intermediate transfer member on the most upstream side thereof in a transfer material conveying direction (Fig. 1)." Taguchi et al.

do not teach, "wherein the pair of rotating members are disposed upstream of a second straight line which is approximately vertical to the direction, in which the partial conveying path, of a horizontal line and a vertical line that are in contact with a portion of the intermediate transfer member on the most downstream side thereof in the transfer material conveying direction." However, wherein the pair of rotating members are disposed upstream of a second straight line which is approximately vertical to the direction, in which the partial conveying path, of a horizontal line and a vertical line that are in contact with a portion of the intermediate transfer member on the most downstream side thereof in the transfer material conveying direction is routine in the art as shown by Suzuki et al. (Fig. 3, ref. # 45, imaginary line passing through 23 & 20 center of rotation). It would have been obvious to one skilled in the art at the time the invention was made to modify Taguchi et al. invention to include wherein the pair of rotating members are disposed upstream of a second straight line which is approximately vertical to the direction, in which the partial conveying path, of a horizontal line and a vertical line that are in contact with a portion of the intermediate transfer member on the most downstream side thereof in the transfer material conveying direction.

The ordinary artisan would have been motivated to modify Taguchi et al. invention in a manner described above for at least the purpose of enabling higher freedom of layout within the machine, also occupying a smaller area.

Regarding claim 10, Taguchi et al. teach, "comprising a cleaning member (13) that is in sliding contact with the image carrier downstream of a portion thereof which

faces the primary transfer position in a rotating direction of the image carrier, wherein the cleaning member is disposed downstream of the first straight line in the transfer member conveying direction (Fig. 1)."

Regarding claim 11, Taguchi et al. teach, "comprising a charging member (102) that charges a portion of the image carrier before an electrostatic latent image is formed in the portion, wherein the charging member is disposed downstream of the first straight line in the transfer member conveying direction (Fig. 1)."

Regarding claim 12, Taguchi et al. teach, "wherein the multi-color developing device (20) is a rotary developing device that has a plurality of developing units (2k, 2y, 2m, 2c), which are disposed about a predetermined center of rotation thereof, and develops the electrostatic latent image on the image carrier by a developing unit which is faced to the image carrier by the rotation of the rotary developing device, and the developing position, at which the electrostatic latent image on the image carrier is developed by the rotary developing device, is disposed downstream of the first straight line in the transfer material conveying direction (Fig. 1)."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Walsh whose telephone number is 571-272-2726. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan D. Walsh
Patent Examiner
Art Unit 2852



DAVID M. GRAY
PRIMARY EXAMINER